## Amendment to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

## **Listing of Claims:**

1. (Allowed) A compound represented by the formula (I), or a salt thereof,

$$\begin{array}{c|c}
T^{1} \\
\downarrow & \\
Z^{1} \\
Z^{2} \\
\downarrow Z^{2}
\end{array}$$

$$\begin{array}{c|c}
X^{1} \\
\downarrow & \\
X^{2}
\end{array}$$

$$\begin{array}{c|c}
X^{3} \\
\downarrow & \\
X^{2}
\end{array}$$

$$\begin{array}{c|c}
X^{3} \\
\downarrow & \\
X^{2}
\end{array}$$

$$\begin{array}{c|c}
X^{3} \\
\downarrow & \\
X^{2}
\end{array}$$

#### wherein.

- T<sup>1</sup> is a piperazin-1-yl group, a 3-amino-piperidin-1-yl group, or a 3-methylaminopiperidin-1-yl group;
- X<sup>3</sup> denotes an oxygen atom or a sulfur atom,
- X¹ denotes a C<sub>1-6</sub> alkyl group which may have substitutents, a C<sub>2-6</sub> alkenyl group which may have substitutents, a C<sub>2-6</sub> alkynyl group which may have substitutents, a 5 to 10-membered heteroaryl group which may have substitutents, a 5 to 10-alkyl group which may have substitutents, a C<sub>6-10</sub> aryl C<sub>1-6</sub> alkyl group which may have substitutents;
- Z<sup>1</sup> denotes a nitrogen atom;
- Z<sup>2</sup> denotes a group of the formula -CR<sup>1</sup>;

### in formula (I), the following formula



### denotes a double bond;

R¹ and X² each independently denote a hydrogen atom, a 4 to 8-membered heterocyclic group which may have substitutents, or a group represented by the formula -A⁰-A¹-A²;

A<sup>0</sup> denotes a single bond, or a C<sub>1-6</sub> alkylene group that may have 1 to 3 substituents selected from the following substituent group A;

A¹ denotes a single bond, oxygen atom, sulfur atom, a sulfinyl group, a sulfonyl group, a carbonyl group, a group of the formula -O-CO, a group of the formula -NR<sup>A</sup>-, a group of the formula -CO-NR<sup>A</sup>-, a group of the formula NR<sup>A</sup>-CO-, a group of the formula -NR<sup>A</sup>-SO<sub>2</sub>-;

A² and R<sup>A</sup> each independently denote a hydrogen atom, a cyano group, a C<sub>1-6</sub> alkyl group, a C<sub>3-8</sub> cycloalkyl group, a C<sub>2-6</sub> alkenyl group, a C<sub>2-6</sub> alkynyl group, a C<sub>6-10</sub> aryl group, a 5 to 10-membered heteroaryl group, a 4 to 8-membered heterocyclic group, or a C<sub>6-10</sub> aryl C<sub>1-6</sub> alkyl group;

however, A<sup>2</sup> and R<sup>A</sup> each independently may have 1 to 3 substituents selected from the substituent group A described below:

## <Substituent group A>

substituent group A refers to a group consisting of: a hydroxyl group, a mercapto group, a cyano group, a halogen atom, a  $C_{1-6}$  alkyl group, a  $C_{2-6}$  cycloalkyl group, a  $C_{2-6}$  alkenyl group, a  $C_{2-6}$  alkenyl group, a  $C_{2-6}$  alkenyl group, a  $C_{1-6}$  alkenyl group, a group of the formula -NR<sup>84</sup>-R<sup>85</sup> (where  $R^{84}$  and  $R^{85}$  denote hydrogen atoms or  $C_{1-6}$  alkyl groups), a group of the formula -CO-R<sup>86</sup> (where  $R^{86}$ 

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denotes a 1-pyrolidinyl group, a 1-morpholinyl group, a 1-piperazinyl group, or a 1-piperidyl group), and a group of the formula -CO-R<sup>B</sup>-R<sup>B2</sup> (where R<sup>B</sup> denotes a single bond, an oxygen atom, or a group represented by the formula -NR<sup>B3</sup>-; R<sup>B2</sup> and R<sup>B3</sup> each independently denote a hydrogen atom, a C<sub>1-6</sub> alkyl group, a C<sub>3-8</sub> cycloalkyl group, a C<sub>2-6</sub> alkenyl group, a C<sub>2-6</sub> alkynyl group, a C<sub>6-10</sub> aryl group, a 5 to 10-membered heteroaryl group, a C<sub>6-10</sub> aryl C<sub>1-6</sub> alkyl group).

2. (Allowed) A compound represented by the formula (II), or a salt thereof,

$$T^{1a}$$
 $X^{1a}$ 
 $X^{1a}$ 
 $X^{3a}$ 
 $X^{3a}$ 
 $X^{3a}$ 
 $X^{3a}$ 
 $X^{3a}$ 
 $X^{3a}$ 

wherein.

Z<sup>3a</sup> denotes a nitrogen atom:

X<sup>3a</sup> denotes an oxygen atom or a sulfur atom;

T<sup>1a</sup> is a piperazin-1-yl group, a 3-amino-piperidin-1-yl group, or a 3-methylaminopiperidin-1-yl group;

 $X^{1a}$  denotes a hydrogen atom, a  $C_{2\cdot6}$  alkenyl group, a  $C_{2\cdot6}$  alkynyl group, or a benzyl group:

R<sup>1a</sup> denotes a hydrogen atom, a halogen atom, a C<sub>1-6</sub> alkyl group, a cyano group, or a group represented by the formula -A<sup>0a</sup>-A<sup>1a</sup>;

A<sup>0a</sup> denotes an oxygen atom, a sulfur atom, or a group represented by the formula -NA<sup>2a</sup>.

 $A^{1a}$  denotes a hydrogen atom, a  $C_{1-6}$  alkyl group, a  $C_{2-6}$  alkenyl group, a  $C_{2-6}$  alkynyl group, a phenyl group, a cyanophenyl group, a carbamoylphenyl group, a benzyl group, a pyridylmethyl group, or a pyridyl group;

A<sup>2a</sup> denotes a hydrogen atom, or a C<sub>1-6</sub> alkyl group;

X<sup>2a</sup> denotes a hydrogen atom, a C<sub>2-6</sub> alkenyl group, a C<sub>2-6</sub> alkynyl group, a cyclohexenyl group, a 1H-pyridin-2-on-yl group, a 1-methyl-1H-pyridin-2-on-yl group, a C<sub>1-6</sub> alkyl group that may have a group selected from substituent group B described below, a phenyl group that may have a group selected from substituent group B described below, a 5 or 6-membered heteroaryl group that may have a group selected from substituent group B described below, a phenyl C<sub>1-6</sub> alkyl group that may have a group selected from substituent group B described below, or a pyridyl C<sub>1-6</sub> alkyl group that may have a group selected from substituent group B described below:

# <Substituent group B>

substituent group B refers to a group consisting of a chlorine atom, a bromine atom, a cyano group, a  $C_{1.6}$  alkyl group, a  $C_{2.6}$  alkenyl group, a  $C_{2.6}$  alkynyl group, a  $C_{3.8}$  cycloalkyl group, a  $C_{1.6}$  alkoxy group, a carbamoyl group, a carboxyl group, and a  $C_{1.6}$  alkoxycarbonyl group].

3. (Allowed) A compound represented by the formula (III), or a salt thereof,

wherein.

T<sup>1b</sup> stands for a piperazin-1-yl group, a 3-amino-piperidin-1-yl group, or a 3methylamino-piperidin-1-yl group:

X<sup>1b</sup> denotes a 2-pentynyl group, a 2-butynyl group, a 3-methyl-2-butenyl group, a 2-butenyl group, or a benzyl group; and

R<sup>1a</sup> and X<sup>2a</sup> have the same meaning as R<sup>1a</sup> and X<sup>2a</sup> of claim 2 defined abovel.

- 4. (Allowed) The compound of claim 2 or 3, or a salt thereof, wherein R<sup>1a</sup> is a hydrogen atom, a chlorine atom, a cyano group, a methoxy group, an ethoxy group, an i-propyloxy group, a methylthio group, an allyloxy group, a 2-butynyloxy group, a phenyloxy group, a cyanophenyloxy group, a carbamoylphenyloxy group, a phenylmethyloxy group, a (phenylmethyl)amino group, a pyridylmethyloxy group, a methylamino group, a dimethylamino group, or a diethylamino group.
- (Allowed) The compound of claim 2 or 3, or a salt thereof, wherein R<sup>1a</sup> is a hydrogen atom, a methoxy group, an ethoxy group, an i-propyloxy group, a 2-cyanophenyloxy group, or a 2-carbamoylphenyloxy group.
- 6. (Allowed) The compound of claim 2 or 3, or a salt thereof, wherein X²a is a hydrogen atom, a methyl group, an ethyl group, an n-propyl group, a 2-methylpropyl group, a group represented by the formula -CH<sub>2</sub>-R¹o (where R¹o denotes a carbamoyl group, a carboxyl group, a methoxycarbonyl group, a cyano group, a cyclopropyl group, or a methoxy group), a 3-cyanopropyl group, an allyl group, a 2-propionyl group, a 2-butynyl group, a 2-methyl-2-propenyl

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group, a 2-cyclohexynyl group, a chloropyridyl group, a methoxypyridyl group, a methoxypyrimidyl group, a pyridyl group, a furyl group, a thienyl group, a pyridylmethyl group, a 1H-pyridin-2-on-5-yl group, a 1-methyl-1H-pyridin-2-on-5-yl group, a phenyl group that may have a group selected from substituent group Y described below, a benzyl group that may have a group selected from substituent group Y described below, or a phenethyl group that may have a group selected from substituent group Y described below.

substituent group Y is a group consisting of: a chlorine atom, a bromine atom, a methoxy group, a cyano group, a vinyl group, and a methyl group.

- 7. (Currently Amended) The compound of claim 2 or 3, <u>or</u> a salt thereof, wherein X<sup>2a</sup> is a methyl group, n-propyl group, allyl group, 2-propynyl group, 2-butynyl group, cyclopropylmethyl group, phenyl group, 3-pyridyl group, 3-furyl group, 3-thienyl group, 2-methoxy-5-pyrimidinyl group, 2-methoxy-5-pyrimidinyl group, 2-methoxy-5-pyrimidinyl group, 2-methoxy-5-pyridyl group, 2-chloro-4-pyridyl group, or 1H-pyridin-2-on-5-yl group.
- (Allowed) A pharmaceutical composition comprising the compound of claim 1, or a salt thereof, and an adjuvant for formulation.